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*Number of cases of influenza reported in certain cities of the United States, by weeks, 1922—Continued.*

City.	Cases reported during week ended—					
	January—				February—	
	7	14	21	28	4	11
Paterson, N. J. ....				4	345	676
Trenton, N. J. ....		1		37	63	57
Albany, N. Y. ....	4	5	6	10	23	45
Buffalo, N. Y. ....				2	10	7
Mount Vernon, N. Y. ....				87	212	168
New York, N. Y. ....	56	57	110	1,230	5,731	7,070
Syracuse, N. Y. ....				2	12	32
Yonkers, N. Y. ....	1	1		2	4	4
Akron, Ohio. ....	4	4	4	5	2	7
Cincinnati, Ohio. ....	1		3	4	24	43
Cleveland, Ohio. ....	1	8	4	6	15	29
Philadelphia, Pa. ....	4	4	2	7	14	49
Pittsburgh, Pa. ....					399	957
Providence, R. I. ....				4	16	83
Columbia, S. C. ....				3		
Dallas, Tex. ....		2		3		
Salt Lake City, Utah. ....						17
Rutland, Vt. ....			1			
Alexandria, Va. ....				5	3	
Roanoke, Va. ....	10	2		1	2	2
Seattle, Wash. ....			1	28	13	
Milwaukee, Wis. ....					3	

## DEATHS FROM INFLUENZA AND PNEUMONIA COMBINED.

COMPARISON OF THE FIRST SIX WEEKS OF THE YEARS 1919-1922, INCLUSIVE, FOR CERTAIN LARGE CITIES OF THE UNITED STATES.

The accompanying table gives the number of reported deaths from influenza and pneumonia (all forms), combined, during the first six weeks of the years 1919, 1920, 1921, and 1922, in 36 large cities of the United States.

This is a continuation of the table printed on page 269 of the Public Health Reports of February 10, 1922 (vol. 37, No. 6).

The weeks for which figures are given all ended on Saturday, the "first" week for each year ending on the following days, respectively: January 4, 1919; January 10, 1920; January 8, 1921; and January 7, 1922.

The figures for 1919 and 1920 were taken from the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce, supplemented by reports to the Public Health Service. For 1921 and 1922 the figures are taken from reports made by the city health officers to the Public Health Service.

Blanks in the table indicate that no reports of deaths from influenza or pneumonia were received for the week. This does not always indicate that no deaths from these diseases occurred. In the sixth week of 1922 it means in most instances that the report has been delayed.

*Number of deaths from influenza and pneumonia (all forms) combined.*

City.	Week number.						City.	Week number.					
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.		First.	Second.	Third.	Fourth.	Fifth.	Sixth.
Birmingham, Ala.:							Cambridge, Mass.—						
1922.....	8	10	14	6	13	4	Continued.						
1921.....	7	14	6	4	9	9	1920.....	8	7	8	14	22	28
1920.....	13	9	16	14	22	18	1919.....	39	22	20	16	25	10
1919.....	36	44	52	41	29	21	Fall River, Mass.:						
Los Angeles, Calif.:							1922.....	5	4	3	6	5	7
1922.....	18	19	14	21	26	29	1921.....	14	5	11	4	5	8
1921.....	12	19	9	13	15	12	1920.....	7	10	5	3	5	16
1920.....	16	18	19	22	42	88	1919.....	10	18	16	14	17	17
1919.....	99	151	178	177	104	47	Lowell, Mass.:						
Oakland, Calif.:							1922.....	4	7	5	4	4	6
1922.....	4	5	5	8	8	8	1921.....	7	6	8	3	6	4
1921.....	4	3	8	7	9	4	1920.....	5	4	2	7	12	10
1920.....	4	8	20	24	55	54	1919.....	13	10	20	26	11	17
1919.....	66	92	111	67	38	18	Worcester, Mass.:						
San Francisco, Calif.:							1922.....	5	10	11	7	16	16
1922.....	11	12	4	12	9	9	1921.....	4	7	13	9	4	10
1921.....	5	5	8	9	7	11	1920.....	10	9	7	14	15	44
1920.....	14	26	48	59	115	137	1919.....	40	36	44	22	23	21
1919.....	194	290	310	149	59	41	Minneapolis, Minn.:						
Denver, Colo.:							1922.....	10	6	9	9	6	9
1922.....	22	11	10	17	18	16	1921.....	13	14	10	8	10	16
1921.....	25	22	23	11	16	21	1920.....	12	10	9	63	168	125
1920.....	21	18	24	49	159	160	1919.....	37	45	24	32	31	31
1919.....	65	47	35	24	29	30	St. Paul, Minn.:						
New Haven, Conn.:							1922.....	7	13	7	3	8	8
1922.....	5	1	5	4	13	10	1921.....	9	5	9	9	7	7
1921.....	4	7	7	7	2	6	1920.....	4	10	26	75	80	63
1920.....	6	8	10	19	20	60	1919.....	39	25	14	12	15	13
1919.....	40	38	27	26	20	12	Kansas City, Mo.:						
Washington, D. C.:							1922.....	15	13	14	25	25	28
1922.....	20	22	27	27	25	22	1921.....	17	17	19	13	14	17
1921.....	22	22	14	9	9	12	1920.....	13	29	96	120	220	167
1920.....	22	27	81	181	164	92	1919.....	49	50	68	45	58	40
1919.....	139	109	107	73	60	42	Omaha, Nebr.:						
Atlanta, Ga.:							1922.....	11	9	17	12	16	12
1922.....	13	7	9	7	20	17	1921.....	8	7	4	14	4	4
1921.....	10	8	9	5	7	18	1920.....	4	7	13	45	62	63
1920.....	19	11	10	15	32	75	1919.....	25	25	17	17	11	12
1919.....	140	140	154	157	154	128	Newark, N. J.:						
Chicago, Ill.:							1922.....	13	15	20	20	33	29
1922.....	48	43	63	65	72	80	1921.....	18	14	15	7	12	13
1921.....	64	79	89	102	92	90	1920.....	17	14	30	55	116	142
1920.....	107	153	472	1,091	1,005	494	1919.....	72	66	57	53	50	45
1919.....	321	269	328	341	277	194	Buffalo, N. Y.:						
Indianapolis, Ind.:							1922.....	6	20	13	19	21	15
1922.....	20	11	9	17	29	42	1921.....	20	18	18	20	13	18
1921.....	15	12	13	13	21	6	1920.....	10	7	19	17	67	141
1920.....	18	16	21	36	92	124	1919.....	48	19	90	123	90	75
1919.....	34	40	25	28	25	23	New York, N. Y.:						
Louisville, Ky.:							1922.....	215	263	284	302	481	596
1922.....	6	12	18	7	16	24	1921.....	235	216	204	203	199	212
1921.....	6	4	5	5	2	2	1920.....	218	261	511	1,308	1,988	1796
1920.....	10	10	9	18	40	52	1919.....	753	870	998	1,193	1,153	893
1919.....	22	20	21	30	20	19	Rochester, N. Y.:						
New Orleans, La.:							1922.....	5	11	12	14	6	7
1922.....	13	14	14	13	4	25	1921.....	4	3	6	8	5	5
1921.....	18	18	21	23	12	21	1920.....	13	7	12	23	50	52
1920.....	27	27	27	32	36	62	1919.....	59	26	17	21	12	16
1919.....	94	141	202	201	125	58	Syracuse, N. Y.:						
Baltimore, Md.:							1922.....	4	6	4	6	7	7
1922.....	32	25	24	26	29	27	1921.....	4	8	3	5	6	2
1921.....	33	20	24	18	26	56	1920.....	9	8	10	31	89	78
1920.....	20	35	24	59	122	268	1919.....	8	13	4	14	18	10
1919.....	48	75	83	150	138	126	Cincinnati, Ohio:						
Boston, Mass.:							1922.....	14	20	15	19	21	27
1922.....	21	17	36	28	33	38	1921.....	14	16	13	11	18	16
1921.....	27	23	36	33	22	10	1920.....	14	12	17	25	38	62
1920.....	28	28	45	85	158	255	1919.....	51	18	18	26	23	39
1919.....	244	227	158	153	110	89	Cleveland, Ohio:						
Cambridge, Mass.:							1922.....	25	22	23	24	31	28
1922.....	5	8	3	4	7	7	1921.....	21	25	26	41	158	258
1921.....	4	5	5	5	1	3	1920.....	21	25	26	41	158	258
1919.....	4	5	5	5	1	3	1919.....	132	94	92	92	108	100

1 Pneumonia (all forms) deaths only.

2 Influenza deaths only.

*Number of deaths from influenza and pneumonia (all forms) combined—Continued.*

City.	Week number.						City.	Week number.					
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.		First.	Second.	Third.	Fourth.	Fifth.	Sixth.
Columbus, Ohio:							Providence, R. I.:						
1922.....	5	9	4	10	8	6	1922.....	13	8	12	17	11	15
1921.....	8	8	12	12	13	12	1921.....	14	6	5	8	14	11
1920.....	15	9	8	22	59	118	1920.....	12	13	8	14	39	88
1919.....	15	14	10	20	19	11	1919.....	47	59	62	61	35	30
Toledo, Ohio:							Nashville, Tenn.:						
1922.....	6	9	8	12	7	6	1922.....	2	7				5
1921.....		3	9	10	5	4	1921.....	2	8	4		10	9
1920.....	9	8	9	18	54	50	1920.....	6	11	6	12	8	23
1919.....	19	15	19	20	15	6	1919.....	20	17	21	21	17	15
Portland, Oreg.:							Richmond, Va.:						
1922.....	4	7	4	6	5	15	1922.....	8	9	9	4	8	9
1921.....	6	5	7	6	4	8	1921.....	5	5	13	6	5	7
1920.....	13	8	9	17	21	57	1920.....	2	9	6	21	35	38
1919.....	55	101	123	122	50	15	1919.....	50	26	34	30	23	11
Philadelphia, Pa.:							Total:						
1922.....	73	98	87	86	85	91	1922.....	671	761	823	863	1,120	1265
1921.....	72	83	85	101	114	108	1921.....	750	737	768	725	738	800
1920.....	55	75	108	153	289	564	1920.....	802	947	1,771	3,820	5,637	5922
1919.....	142	194	229	259	308	262	1919.....	3,165	3,346	3,688	3,756	3,180	2427

## THE DETERMINATION OF HYDROGEN ION CONCENTRATION.

By FRANCIS H. McCrudden, Surgeon (R), United States Public Health Service; United States Veterans' Hospital No. 36, Boston, Mass.

The acidity of a solution may be expressed in terms of concentration of acid or in terms of hydrogen ion concentration. Though the significance and relationship of these two modes of expression and the practical determination of degree of acidity in both senses have become of considerable practical importance in medicine, I have not yet seen a statement of the subject simple enough to enable the physician with very little knowledge of chemistry to understand and actually determine hydrogen ion concentration. The statement which follows, framed especially for the bacteriologist with very little knowledge of chemistry, is intended as a step in this direction.

### 1. CONCENTRATION OF ACID.

*Normal solutions.*—The concentration of acid solutions is not usually expressed in percentage strength but as normal (N), half normal ( $\frac{N}{2}$ , 0.5 N), tenth normal ( $\frac{N}{10}$ , 0.1 N), etc. A normal solution of acid is one containing one gram of hydrogen per liter replaceable by a base. This chemical use of the term "normal" with reference to acids and alkalis is not to be confused with the use of the term in the expression "normal salt solution" where it means a solution normal to, or containing as much salt as blood and tissue fluids—about three-quarters of 1 per cent.